

Fellowship Training: A Necessity in Today's Academic World

You now are at the point in your training where you are beginning to believe that there is life after medical school and residency. This is an exciting time; you are about to get your first job as an attending emergency physician. The next decisions you make may be critical and could shape and define the remainder of your career. Before making these decisions and selecting a position, you should ask yourself several important questions. First, define as best you can your long-term career goals and aspirations. This should include your vision of the ideal emergency medicine (EM) faculty position, and should be as detailed as possible. Consider specifics, such as how you want to spend your workweek, and what percentage of your time you want to devote to various aspects of your job (i.e., direct patient care, medical student or resident education, administrative tasks, research, writing, committee work). Next research and answer the question, "What is the best way to ensure that I will be able to attain these goals?" If your goals include a career in academic EM, then the answer to the second question is easy—the best way to ensure your success and happiness as an academician is to obtain postgraduate training. If you want to pursue a specific clinical discipline such as pediatric EM, toxicology, or sports medicine, the need for fellowship training is obvious. But what if you want to focus your academic career in research or education? Is postgraduate training necessary for these career paths? The answer is an unqualified "yes!" (at least if you want to maximize your chances of success and career satisfaction).

Now at this point you may be cringing at the thought of extending your training and delaying the financial rewards of a full-time faculty position. You may have significant debts hanging over your head that you are anxious to pay off. Despite this temporary economical sacrifice (and this is the only disadvantage to fellowship training), there are numerous rewards and advantages. I would like to take this opportunity to describe the benefits you are sure to reap if you pursue postgraduate training.

First, fellowship training will allow you to attain a mastery of knowledge and skills in a given area well beyond that developed in residency. It will provide you with a level of expertise such that your colleagues will frequently look to you for advice and teaching. In addition, because of this training you will be better prepared for, and therefore will

more likely be offered the privilege of, representing our specialty on a national level regarding issues specific to your area of expertise. You will be afforded the unique opportunity to discuss and develop curricula, policy, and protocol specific to your discipline at a local and national level. The enhanced ability to teach so many others, and effect significant change, is the greatest reward of fellowship training. But there are also practical advantages to pursuing postgraduate training.

There is substantial evidence that fellowship training enhances career satisfaction. In a study of surgeons in academic medicine, those who completed fellowship training expressed greater career satisfaction and had fewer concerns about professional confidence as compared with those who did not complete such training.¹ Those who did not obtain fellowship training were more likely to express dissatisfaction, frustration, and uncertainty with regard to their career. These findings are consistent with studies in other medical specialties, and are not unexpected, assuming postgraduate training better prepares one for the many challenges of academic medicine. Certainly, acquisition and mastery of the skills necessary to succeed at one's job would result in a less-stressful work environment and greater career satisfaction. And in fact, data from several specialties demonstrate that fellowship-trained academicians feel more adequately prepared for their positions and careers.^{2,3} There is also evidence that the corollary is true; that faculty who have not received training to meet the challenges of academic medicine feel unprepared. Twenty-five percent of junior faculty surveyed in pulmonology stated that their training, which emphasized clinical medicine, did not adequately prepare them for an academic position, specifically citing training in research methods and in writing papers and grants.³ This is consistent with another survey of medical faculty in which approximately 23% of MD researchers (vs. <5% of MD-PhDs and PhDs) indicated that their formal training experience had not properly prepared them for their current positions.⁴ Similarly a survey of all U.S. EM residents demonstrated that the majority perceive their training in basic academic skills such as medical writing, grant writing, statistics, and study design (all essential skills for success in an academic career) as only fair.⁵ In a survey of program directors of all U.S. EM residencies, only 29% of respondents indicated that they believed their residents

were well prepared for an academic career that requires original research.⁶ Similarly, in a survey of practicing emergency physicians, academic faculty cited insufficient research training and finding knowledgeable collaborators as significant obstacles to research productivity.⁷

This sense of ill preparedness for academic medicine without significant postgraduate training is not likely an illusion. A study conducted by the Association of American Medical Colleges demonstrated that having two or more years of postdoctoral training, which included formal course work in the fundamental sciences pertinent to the investigator's area of concentration, significantly enhanced the likelihood of success for a researcher in academic medicine.⁸ A study of full-time faculty at U.S. medical schools examined the association between fellowship training for primary care physician-faculty and professional outcomes such as academic productivity, rank, salary, and likelihood of promotion. Fellowship-trained physician-faculty had a greater number of publications, greater success in obtaining grant funding, and a greater likelihood of academic promotion.² This is consistent with data from internal medicine academic faculty, which demonstrate a positive correlation between length of postdoctoral training and being an active researcher and principal investigator for a peer-reviewed research grant.⁴

Career satisfaction among fellowship-trained academicians may also be higher because postgraduate training appears to enable faculty to structure their work responsibilities more specifically to their interests. In a study of fellowship-trained toxicologists, a significant proportion of respondents reported that their postgraduate training allowed them to obtain a reduction in their clinical responsibilities so that they could spend more time pursuing activities such as involvement in poison center leadership and fellowship training, as well as research.⁹ Similarly, primary care physician-faculty at academic institutions who were fellowship-trained had more protected time for research and spent less time in patient care activities, as compared with non-fellowship-trained physician faculty.² In other words, developing a focus of expertise may enable you to take more control of your job structure and how you spend your time. This can be expected regardless of the discipline in which you received your training and expertise. In addition to the obvious increased satisfaction that comes with spending your time doing the things you enjoy most, there is a practical advantage to being able to structure your own time. By devoting more energy to your specific career interests, you will be better able to accomplish your career goals.

Unfortunately in these times of increasing clinical demands and decreasing revenue, one cannot expect an administrator or academic chair to provide a reduction in clinical responsibilities in order for you to pursue your passion if you have not already demonstrated a true commitment and developed expertise in that area.

You may still be unconvinced or at least skeptical of the necessity and value of fellowship training. I am guessing that like most of my early role models in academic medicine, most of your role models did not pursue postgraduate training, and so it is logical to conclude that this sacrifice of time and money is unnecessary. Similarly, you may hear from many faculty that you do not need to do a fellowship to obtain a position in and practice academic EM. You may be under the false impression that you will be able to develop the specific skills and knowledge base, as a junior faculty member, for an academic career in your area of interest. After all, your clinical load will certainly be significantly less than when you were a resident. Allow me to provide you with some reality.

First, in the recent past, there was a significant shortage of academic faculty. Nearly any EM residency graduate with minimal research or other academic experience and a desire to pursue an academic career was highly sought-after. This trend is rapidly changing. With the past increase in the number of residency programs and in residency graduates, and the current decrease in the growth of new programs, one can predict that in the future there will be fewer academic spots available. It follows that the competition for these positions will be tougher. Those with advanced training and demonstrated expertise in a specific discipline will be filling these positions.

Second, in the past decade, the face of academic EM has significantly changed. During this time period, more than 30 new academic departments and 30 new residency programs have been established in EM. Unlike the earlier EM residency programs, approximately 40% of the new departments and 30% of the new residency programs are at research-intensive academic medical centers as defined by the level of National Institutes of Health (NIH) funding. Therefore, one can expect that the greatest need for academic faculty will be at these institutions. The success of academic EM faculty at these institutions will no doubt require demonstrated skill not only as clinicians and educators, but as traditional academicians, publishing regularly and competing for research funding. So although many of your current role models may have survived in academic medicine without postgraduate training, this will not be the norm in the near future. In fact,

there are several senior faculty in our specialty who have recently enrolled in various postgraduate training programs in order to further enhance their academic skills.

Third, it is unrealistic to consider that you will have the time to develop the skills and knowledge needed for an academic career as a junior faculty member. Even junior faculty who have had significant postgraduate training require protected time to further develop their teaching and investigative skills. Unfortunately, many junior faculty are soon overburdened with clinical and administrative demands, leaving little time for investigative or other academic pursuits. These faculty often become frustrated and drop out of academic medicine. To avoid this scenario, some academic leaders recommend that junior academic faculty allocate a minimum of 33% of their time, while some recommend up to 75% of their time, to research.^{4,10} James B. Wynaerden, former director of the NIH, recommended that investigator training programs be at least two years in length and devote 80% or more of their training to research.¹¹

Unfortunately, even the most desirable academic EM faculty positions usually require a minimum clinical commitment of 24 hours per week, and typically the number is closer to 28 hours per week. This does not include teaching or administrative responsibilities. Therefore, at least 30 hours of the workweek are already accounted for. This clearly does not leave adequate time for concentrated study in any discipline. Therefore, even in the best of circumstances it seems unrealistic that a junior faculty would be afforded adequate time to develop a true expertise in a given academic discipline. Couple this with the current reality that clinical demands in the academic world are increasing. Academicians in all specialties are being asked to assume more clinical responsibilities with the increased financial constraints placed on academic medical centers. As emergency department volumes increase and revenue fails to keep pace, there will be more pressure on faculty to spend a greater percentage of their time doing clinical work. Junior faculty are particularly vulnerable to having their time usurped in this manner. Senior faculty have more often already acquired funding for research or other academic activities, affording them protected time. Hence, junior faculty are most often the first to be asked to assume additional duties, whether it be clinical or teaching responsibilities; this in spite of the fact that these physicians are in their so-called formative years, consequently the most critical and vulnerable period of their careers. In a survey of junior pulmonary faculty at institutions with training programs, lack of protected time

to develop necessary research skills was cited as the greatest obstacle to academic success.³ In the same survey, faculty were asked about employment agreements that were not honored. Twenty-two percent answered that their terms of employment had been violated. As one might predict, disagreements arose most frequently from unexpected increases in clinical duties, as well as from decreases in promised support (i.e., funds, technical assistance, and space). A fellowship, however, protects and insulates the trainee from these pressures. Fellowship training is the only mechanism by which you will be granted adequate protected time to develop the academic skills required in the discipline of your choosing. As a fellow, the department or section has a continued obligation to your academic development and education; and, unfortunately, the latter is not always the first priority for junior faculty.

Finally, fellowship training contributes to a physician's academic success through the establishment of important mentoring and collaborative relationships. The establishment of appropriate mentors is vital to the success of any academician. Many experienced academicians report that finding a good mentor was the most critical aspect in their achieving success. Successful researchers usually have a network of professional colleagues with whom they maintain frequent contact. These colleagues provide quick access to the most recent work in the area, serve as thinking partners when the researcher needs help, and open doors to peer review panels. These relationships also serve faculty through help in teaching, institutional linkage, national linkage, and recognition.

Data demonstrate that the most productive researchers have had help before, during, and after training from advisers or mentors. Individuals who associate and collaborate early with senior scientists are more likely themselves to become productive researchers.¹² In a study of junior faculty at U.S. medical schools, faculty who had mentors rated the adequacy of professional support from their institutions for teaching, research, and administrative activities significantly higher than did the faculty without mentors. They also rated their research preparation and research skills higher, had significantly higher career-satisfaction scores, and had a greater likelihood of being awarded research grants.¹³ Blackburn wrote: "Mentorship/sponsorship in the first years is critical for launching a productive career. Learning the informal network that supports productivity—the inner workings of professional associations and who the productive people are—is critical."¹⁴ Besides providing training and contacts, mentors help one to define appropri-

ate career goals and assist in achieving these goals through career sponsorship and psychosocial support. The ideal mentor will place the fellow's goals above program or institutional goals; he or she will protect the trainee from excessive demands from the institution and department, as well as protect the trainee from his or her own natural inclination to take on too many activities. The deleterious effect of a lack of an appropriate mentor has been demonstrated by Katz, who noted that during a researcher's first year on the job, the "most significant negative correlate with productivity is autonomy."¹⁵

Appropriate mentors may be easier to find and these relationships more readily established while in a postgraduate training program, where there is likely to be a critical mass of more senior investigators and academicians with expertise in your area of interest. A good postgraduate training program will provide you with several potential mentors. From a personal perspective, the establishment of specific mentoring relationships was one of the most satisfying and important aspects of my fellowship training. I have been able to continue these relationships throughout my academic career, and they have provided me with much needed professional and personal support.

In summary, data from EM, as well as other medical specialties, clearly demonstrate that residency training does not provide adequate preparation for an academic career. There is significantly greater likelihood of success and career satisfaction if one receives appropriate postgraduate training. This may take the form of a traditional clinical fellowship such as pediatric EM or toxicology, a well-structured research fellowship, or a degree program such as an MBA or master's in education. This will be the only time in your career in which you will be completely protected from the political and financial pressures of the academic medical center, and be afforded adequate time to completely immerse yourself in the study of your chosen discipline. If you choose to make this "sacrifice" and pursue such training, you will be rewarded throughout the remainder of your career. You will be prepared to take on a leadership role within our specialty, and perhaps within the greater house of

academics. You will develop some of your closest and most cherished professional (and perhaps personal) relationships during your postgraduate training, and these will continue throughout your career. Fellowship training was one of the most enriching experiences of my career. I hope you will consider this great opportunity for yourself.—**Susan Stern, MD** (suestern@umich.edu), *Department of Emergency Medicine, University of Michigan, Ann Arbor, MI*

References

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